

# United States District Court Southern District of Texas

Case Number: H-05-3424

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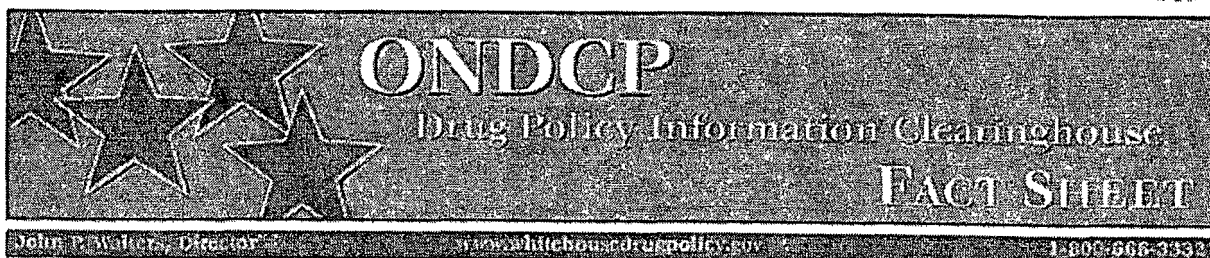
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TAB 28

Executive Office of the President  
Office of National Drug Control Policy



## Methamphetamine

### November 2003

PDF Version (91 KB)

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**Methamphetamine**

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#### Background

Methamphetamine, a derivative of amphetamine, is a powerful stimulant that affects the central nervous system. Amphetamines were originally intended for use in nasal decongestants and bronchial inhalers and have limited medical applications, which include the treatment of narcolepsy, weight control, and attention deficit disorder. Methamphetamine can be smoked, snorted, orally ingested, and injected. It is accessible in many different forms and may be identified by color, which ranges from white to yellow to darker colors such as red and brown. Methamphetamine comes in a powder form that resembles granulated crystals and in a rock form known as "ice," which is the smokeable version of methamphetamine that came into use during the 1980s.

#### Effects

Methamphetamine use increases energy and alertness and decreases appetite. An intense rush is felt, almost instantaneously, when a user smokes or injects methamphetamine. Snorting methamphetamine affects the user in approximately 5 minutes, whereas oral ingestion takes about 20 minutes for the user to feel the effects. The intense rush and high felt from

methamphetamine results from the release of high levels of dopamine into the section of the brain that controls the feeling of pleasure. The effects of methamphetamine can last up to 12 hours. Side effects include convulsions, dangerously high body temperature, stroke, cardiac arrhythmia, stomach cramps, and shaking.

Chronic use of methamphetamine can result in a tolerance for the drug. Consequently, users may try to intensify the desired effects by taking higher doses of the drug, taking it more frequently, or changing their method of ingestion. Some abusers, while refraining from eating and sleeping, will binge, also known as "run," on methamphetamine. During these binges, users will inject as much as a gram of methamphetamine every 2 to 3 hours over several days until they run out of the drug or are too dazed to continue use.

Chronic methamphetamine abuse can lead to psychotic behavior including intense paranoia, visual

and auditory hallucinations, and out-of-control rages that can result in violent episodes. Chronic users at times develop sores on their bodies from scratching at "crank bugs," which describes the common delusion that bugs are crawling under the skin. Long-term use of methamphetamine may result in anxiety, insomnia, and addiction.

After methamphetamine use is stopped, several withdrawal symptoms can occur, including depression, anxiety, fatigue, paranoia, aggression, and an intense craving for the drug. Psychotic symptoms can sometimes persist for months or years after use has ceased.

## Prevalence Estimates

According to the U.S. Department of Health and Human Services' *Results From the 2002 National Survey on Drug Use and Health: National Findings*, more than 12 million people age 12 and older (5.3%) reported that they had used methamphetamine at least once in their lifetime (see [table 1](#)). Of those surveyed, 597,000 persons age 12 and older (0.3%) reported past month use of methamphetamine.

Since 1999, methamphetamine has been included in the University of Michigan's Monitoring the Future survey questionnaire. Survey results indicate that annual methamphetamine use (use within the past year) by secondary school students in 1999 ranged from 3.2% among 8th graders, to 4.6% among 10th graders, to 4.7% among 12th graders (see [table 2](#)). In 2002, estimates of annual methamphetamine use ranged from 2.2% among 8th graders, to 3.9% among 10th graders, to 3.6% among 12th graders.

The study also collected data on methamphetamine use by college students and young adults ages 19 to 28. During 1999, 3.3% of college students and 2.8% of young adults tried methamphetamine in the past year (see [table 3](#)). In 2002, annual use of methamphetamine declined to 1.2% for college students and 2.5% for young adults.

Table 1. Percentage of lifetime methamphetamine use among U.S. population by age group, 2002

Age Group	Lifetime	Past Year	Past Month
12–17	1.5%	0.9%	0.3%
18–25	5.7	1.7	0.5
26 and older	5.7	0.4	0.2
Total population	5.3	0.7	0.3

Source: National Survey on Drug Use and Health.

Table 2. Percentage of methamphetamine use by secondary school students, by grade, 1999–2002

Grade	Lifetime			
	1999	2000	2001	2002
8th graders	4.5%	4.2%	4.4%	3.5%
10th graders	7.3	6.9	6.4	6.1
12th graders	8.2	7.9	6.9	6.7
Grade	Annual			
	1999	2000	2001	2002
8th graders	3.2%	2.5%	2.8%	2.2%
10th graders	4.6	4.0	3.7	3.9
12th graders	4.7	4.3	3.9	3.6
Grade	Past 30 Days			
	1999	2000	2001	2002
8th graders	1.1%	0.8%	1.3%	1.1%
10th graders	1.8	2.0	1.5	1.8
12th graders	1.7	1.9	1.5	1.7

Source: Monitoring the Future Study.

Table 3. Percentage of methamphetamine use by college students and young adults, 1999–2002

Age Groups	Lifetime				Annual				Past 30 Days			
	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
College students	7.1%	5.1%	5.3%	5.0%	3.3%	1.6%	2.4%	1.2%	1.2%	0.2%	0.5%	0.2%
Young adults	8.8	9.3	9.0	9.1	2.8	2.5	2.8	2.5	0.8	0.7	1.0	1.0

Source: Monitoring the Future Study.

According to the Centers for Disease Control and Prevention's *Youth Risk Behavior Surveillance—United States, 2001* study, 9.8% of high school students had used methamphetamine within their lifetime. Overall, white (11.4%) and Hispanic (9.1%) students were more likely than black students (2.1%) to report lifetime methamphetamine use.

## Regional Observations

The widespread availability of methamphetamine is illustrated by increasing numbers of methamphetamine seizures, arrests, indictments, and sentences. According to the National Drug Intelligence Center (NDIC), methamphetamine is widely available throughout the Pacific, Southwest, and West Central regions and is increasingly available in the Great Lakes and Southeast.

Similarly, the National Institute on Drug Abuse's Community Epidemiology Work Group (CEWG) reports that, in 2002, methamphetamine indicators remained highest in West Coast areas and parts of the Southwest, as well as Hawaii. Methamphetamine abuse is spreading in areas such as Atlanta, Chicago, Detroit, St. Louis, and Texas. Relatively low indicators were found in East Coast and Mid-Atlantic CEWG areas, although abuse is increasing.

According to the Arrestee Drug Abuse Monitoring Program sites, during 2002, methamphetamine use by adult arrestees was concentrated in the Western region of the United States. Out of 36 sites, the highest percentages of adult male arrestees testing positive for methamphetamine were located in Honolulu (44.8%), Sacramento (33.5%), San Diego (31.7%), and Phoenix (31.2%). Out of 23 sites, the highest percentages of adult female arrestees testing positive for methamphetamine were located in Honolulu (50%), San Jose (42.8%), Phoenix (41.7%), Salt Lake City (37.7%), and San Diego (36.8%).

According to *Pulse Check: Trends in Drug Abuse*, law enforcement agencies and epidemiologic/ethnographic sources surveyed in 2002 reported that methamphetamine availability increased in the following sites: Boston, Billings, Chicago, Columbia (South Carolina), Denver, Detroit, Honolulu, Los Angeles, Memphis, Miami, New York, and Sioux Falls (South Dakota). The remaining 12 Pulse Check sites reported stable methamphetamine availability. There were no reported decreases in availability.

## Availability

Yaba, the Thai name for a tablet form of methamphetamine mixed with caffeine, is appearing in Asian communities in California. These tablets are popular in Southeast and East Asia where they are produced. The tablets are small enough to fit in the end of a drinking straw and are usually reddish-orange or green with various logos. There are indications that methamphetamine tablets are becoming more popular in the rave scene because their appearance is similar to club drugs such as Ecstasy.

## Production and Trafficking

Methamphetamine trafficking and abuse have changed in the United States during the past 10 years. Mexican drug trafficking organizations have become the dominant manufacturing and distribution group in cities in the Midwest and the West. Methamphetamine production and abuse were previously controlled by independent laboratory operators, such as outlaw motorcycle gangs, which continue to operate but to a smaller extent. The Mexican criminal organizations are able to manufacture in excess of 10 pounds of methamphetamine in a 24-hour period, producing high-purity, low-cost methamphetamine.

Methamphetamine precursor chemicals usually include pseudoephedrine and ephedrine drug products. Mexican organizations sometimes use methylsulfonylmethane (MSM) to "cut" the methamphetamine in the production cycle. MSM is legitimately used as a dietary supplement for horses and humans. The supplement is readily available at feed/livestock stores and in health/nutrition stores. By adding MSM, the volume of methamphetamine produced is increased, which in turn increases the profits for the dealer.

## Price and Purity

According to the Drug Enforcement Administration (DEA), during 2001, the price of methamphetamine ranged nationally from \$3,500 to \$23,000 per pound, \$350 to \$2,200 per ounce, and \$20 to \$300 per gram. The average purity of methamphetamine decreased from 71.9% in 1994 to 40.1% in 2001. International controls have reduced the availability of chemicals used to produce high-purity methamphetamine and may have contributed to the decrease in purity levels.

## **Enforcement**

### **Arrests**

From October 1, 2000, to September 30, 2001, there were 3,932 Federal drug arrests for amphetamine/methamphetamine, representing 12% of all Federal drug arrests.

### **Seizures**

According to the Federal-wide Drug Seizure System (FDSS), 2,807 kilograms of methamphetamine were seized in 2001 by U.S. Federal law enforcement authorities, down from 3,373 kilograms in 2000. FDSS consolidates information about drug seizures made within the jurisdiction of the United States by DEA, the Federal Bureau of Investigation, and U.S. Customs and Border Protection, as well as maritime seizures made by the U.S. Coast Guard. FDSS eliminates duplicate reporting of seizures involving more than one Federal agency.

In addition, Federal authorities seized 301,697 Southeast Asian methamphetamine tablets in U.S. Postal Service facilities in Oakland, Los Angeles, and Honolulu in 2000, representing a 656% increase from the 1999 seizures of 39,917 tablets.

According to the El Paso Intelligence Center's National Clandestine Laboratory Seizure System, 8,290 methamphetamine labs were seized in 2001. In 2001, there were 303 "superlabs" with the capacity to produce 10 or more pounds of methamphetamine in one production cycle seized in the United States.

### **Adjudication**

During FY 2001, 3,404 Federal drug offenders were convicted of committing an offense involving methamphetamine. Of those convicted of a Federal drug offense for methamphetamine, 59% were white, 35.2% were Hispanic, 4.2% were of another race, and 1.6% were black.

### **Corrections**

In FY 2001, the average length of sentence received by Federal methamphetamine offenders was 88.5 months, compared with 115 months for crack cocaine offenders, 77 months for powder cocaine offenders, 63.4 months for heroin offenders, 38 months for marijuana offenders, and 41.1 months for other drug offenders.

## **Consequences of Use**

Chronic methamphetamine abuse can result in inflammation of the heart lining and, for injecting drug users, damaged blood vessels and skin abscesses. Social and occupational connections progressively deteriorate for chronic methamphetamine users. Acute lead poisoning is another potential risk for methamphetamine abusers because of a common method of production that uses lead acetate as a reagent.

Medical consequences of methamphetamine use can include cardiovascular problems such as rapid heart rate, irregular heartbeat, increased blood pressure, and stroke-producing damage to small blood vessels in the brain. Hyperthermia and convulsions can occur when a user overdoses and, if not treated immediately, can result in death. Research has shown that as much as 50% of the dopamine-producing cells in the brain can be damaged by prolonged exposure to relatively low levels of methamphetamine and that serotonin-containing nerve cells may be damaged even more extensively.

Methamphetamine abuse during pregnancy can cause prenatal complications such as increased rates of premature delivery and altered neonatal behavior patterns, such as abnormal reflexes and extreme irritability, and may be linked to congenital deformities. Methamphetamine abuse, particularly by those who inject the drug and share needles, can increase users' risks of contracting HIV/AIDS and hepatitis

B and C.

During 1995, hospitals participating in the Drug Abuse Warning Network (DAWN) reported 15,933 mentions of methamphetamine (see [table 4](#)). A drug mention refers to a substance that was recorded (mentioned) during a drug-related visit to the emergency department (ED). By 1999, the number of methamphetamine ED mentions decreased to 10,447. This number increased to 17,696 in 2002.

Table 4. Number of emergency department methamphetamine mentions, 1995–2002

1995	1996	1997	1998	1999	2000	2001	2002
15,933	11,002	17,154	11,486	10,447	13,505	14,923	17,696

Source: Drug Abuse Warning Network.

In 2001, DAWN's mortality data for methamphetamine mentions to medical examiners remained concentrated in the Midwest and West regions of the United States. The metropolitan areas reporting the most methamphetamine mentions were Phoenix (122), San Diego (94), and Las Vegas (53). The East Coast area that reported the highest number of methamphetamine mentions was Long Island (49). Out of 42 metropolitan areas studied, 15 areas reported fewer than 5 methamphetamine mentions.

## Treatment

According to the Treatment Episode Data Set, during 2000 methamphetamine treatment admissions accounted for 4.1% of total admissions or 66,052 admissions. Those admitted for methamphetamine/amphetamine were primarily white (79%) and male (53%). In 1994, there were half as many admissions for methamphetamine, 33,432 or about 2% of all admissions for treatment.

There are no pharmacological treatments for methamphetamine dependence. Antidepressant medications can be used to combat the depressive symptoms of withdrawal. The most effective treatment for methamphetamine addiction is cognitive behavioral interventions, which modify a patient's thinking, expectancies, and behavior while increasing coping skills to deal with life stressors.

## Clandestine Laboratories

Methamphetamine can be easily manufactured in clandestine laboratories (meth labs) using ingredients purchased in local stores. Over-the-counter cold medicines containing ephedrine or pseudoephedrine and other materials are "cooked" in meth labs to make methamphetamine.

The manufacture of methamphetamine has a severe impact on the environment. The production of one pound of methamphetamine releases poisonous gas into the atmosphere and creates 5 to 7 pounds of toxic waste. Many laboratory operators dump the toxic waste down household drains, in fields and yards, or on rural roads.

Due to the creation of toxic waste at methamphetamine production sites, many first response personnel incur injury when dealing with the hazardous substances. The most common symptoms suffered by first responders when they raid meth labs are respiratory and eye irritations, headaches, dizziness, nausea, and shortness of breath.

Meth labs can be portable and so are easily dismantled, stored, or moved. This portability helps methamphetamine manufacturers avoid law enforcement authorities. Meth labs have been found in many different types of locations, including apartments, hotel rooms, rented storage spaces, and trucks. Methamphetamine labs have been known to be boobytrapped and lab operators are often well armed.

According to DEA, in 2001 there were 12,715 methamphetamine laboratory incidents reported in 46 States. The West Coast accounted for most of the laboratory incidents. On the East Coast, the following States reported the highest incident rates: Georgia (51), North Carolina (31), and Florida (29). Nationally, the highest rate of lab activity took place in Missouri, which reported 2,207 incidents. California and Washington also had high incident rates with 1,847 and 1,477, respectively.

## Scheduling and Legislation

Methamphetamine is a Schedule II drug under the Controlled Substance Act of 1970. A Schedule II Controlled Substance has high potential for abuse, is currently accepted for medical use in treatment in the United States, and may lead to severe psychological or physical dependence.

The chemicals that are used to produce methamphetamine also are controlled under the Comprehensive Methamphetamine Control Act of 1996 (MCA). This legislation broadened the restrictions on listed chemicals used in the production of methamphetamine, increased penalties for the trafficking and manufacturing of methamphetamine and listed chemicals, and expanded the controls of products containing the licit chemicals ephedrine, pseudoephedrine, and phenylpropanolamine (PPA).

The Methamphetamine Anti-Proliferation Act was passed in July 2000. The act strengthens sentencing guidelines and provides training for Federal and State law enforcement officers on methamphetamine investigations and the handling of the chemicals used in clandestine meth labs. It also puts in place controls on the distribution of the chemical ingredients used in methamphetamine production and expands substance abuse prevention efforts.

## Street Terms

### Street terms for methamphetamine

Blue meth	Meth
Chicken feed	OZs
Cinnamon	Peanut butter
Crink	Sketch
Crystal meth	Spoosh
Desocsins	Stove top
Geep	Super ice
Granulated orange	Tick tick
Hot ice	Trash
Ice	Wash
Kaksonjae	Working man's cocaine
L.A. glass	Yellow barn
Lemon drop	Yellow powder

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*Last Updated: April 14, 2004*

## Questions &amp; Answers



**Q.** What are the dangers of methamphetamine?

**A.** Methamphetamine is a stimulant that can be snorted, smoked, or injected. It is less expensive and possibly more addictive than cocaine or heroin. It first became popular as a recreational drug in the 1960s, and acquired many street names, including meth, crystal, speed, ice, and crank. Methamphetamine use reached epidemic proportions in Japan as early as a decade after World War II, and it is still Japan's most popular illicit drug. In the United States, methamphetamine use burgeoned in Hawaii and quickly spread to the West Coast. It is now a countrywide problem, not at all limited to big cities. The highest rates of abuse are found in rural Idaho, Utah, and Iowa.

About one in 25 Americans has tried methamphetamine, and the reasons for its popularity are obvious: It boosts energy, induces euphoria, and suppresses appetite. In one study of methamphetamine use in Iowa, women used it to escape their troubles, cope with family problems, improve concentration, increase strength, and lose weight.

But when used habitually, methamphetamine has adverse effects that range from mild to disastrous. Common psychiatric symptoms are insomnia, irritability, and aggressive behavior. The drug causes intellectual deficits, anxiety, and depression. Chronic users become disorganized and unable to cope with everyday problems. The risk of developing psychotic symptoms—hallucinations and delusions—is very high. Despair and suicidal thinking can set in when the stimulant effect wears off. During intoxication, the body (and probably brain) temperature rises, sometimes resulting in convulsions. Methamphetamine can damage blood vessels in the brain, causing strokes. High fevers or collapse of the circulatory system can cause death.

This drug has become frighteningly popular among gay and bisexual men, where it has been linked to an increase in unsafe sex practices. Methamphetamine use—and needle sharing—have been linked to a spike in HIV and hepatitis C infections in this population.

Methamphetamine also harms important nerve pathways, perhaps irreversibly. The drug delivers euphoria by releasing the neurotransmitter dopamine in the brain's reward system. Overstimulation eventually damages or destroys the nerve cells in these circuits, impairing dopamine transport and reducing the efficiency of dopamine receptors; the reward system is, in a sense, worn out. The brain recovers somewhat after months of abstinence, but problems often remain. Former methamphetamine addicts may suffer from chronic apathy and anhedonia (inability to experience pleasure) for years.

Unlike cocaine, methamphetamine is not smuggled into the United States by drug traffickers. Illicit manufacturers use easily available ingredients to quickly set up crude laboratories and move on when they are threatened. Production releases poisonous gases and results in toxic waste that is often dumped down household drains, in a backyard, or at a roadside. Over-the-counter cold medicines (ephedrine and pseudoephedrine) are commonly used in production, which is one reason for federal and state restrictions on their sale.

There are no simple solutions to this growing health problem. Like all drug abuse, methamphetamine addiction is difficult to treat. Standard substance abuse treatment methods such as education, behavior therapy, individual and family counseling, and support groups may be effective for some. Methamphetamine abusers often use other illicit drugs as well, a problem that can be addressed as part of a comprehensive program.

Perhaps the best hope is that, as scientists learn more about what is going wrong in the brains of addicts, they will develop drug treatments to correct the flawed biology that fosters addiction. But despite the growing body of research in this area, reliable treatments are probably still years away.

Michael Craig Miller, M.D.  
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Jennings, Ann

From: Ring, Steven  
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ARTICLE: DRUGS: METHAMPHETAMINE ABUSE, VIOLENCE AND APPROPRIATE TREATMENT

NAME: David E. Smith, M.D., \* Gantt P. Galloway, Pharm.D. & Richard B. Seymour, M.A.

BIO:

\* President, American Society of Addiction Medicine; Founder, Haight-Ashbury Free Clinics, San Francisco.

SUMMARY:

... In November of 1996, Dr. David Smith had the opportunity to present the following paper in a panel which included Dr. Garrett O'Connor and Dr. Westley Clark, two leading experts in the addiction field, at the Valparaiso University School of Law Conference on Teenage Violence and Drug Use. ... It was for that reason that the authors selected methamphetamine abuse as a prototypical drug phenomenon since the pharmacological properties of this psychoactive stimulant contribute directly to violence. ... Methamphetamine abuse contributes directly to violence in a variety of ways, but in fact, epidemiological studies have indicated that this contribution occurs most commonly in the Caucasian population. ... HIV may become a greater problem in MA users than in opiate and other drug users; this has apparently already happened in California. ... For instance, an amphetamine abuser who is using to medicate an attention deficit disorder may present quite differently from an abuser who is attempting to medicate an underlying depressed mood or one whose primary reason for using is related to social context. ... With abstinence, these symptoms and the stimulant psychosis generally resolve, although they can reappear if the user returns to methamphetamine abuse. ... In summary, this paper has focused on methamphetamine as a prototypical drug of violence that tends to counter the stereotype that drug-induced violence occurs only with crack cocaine abuse in the African American community. ...

TEXT:

[\*661]

I. Introduction

In November of 1996, Dr. David Smith had the opportunity to present the following paper in a panel which included Dr. Garrett O'Connor and Dr. Westley Clark, two leading experts in the addiction field, at the Valparaiso University School of Law Conference on Teenage Violence and Drug Use. The conference was multi-disciplinary in nature and included perspectives from physicians, lawyers, economists and criminologists, with the goal of making an important contribution to legal scholarship in this area. However, as Dr. O'Connor emphasized in his introductory remarks to our panel, the violence associated with the abuse of psychoactive drugs played a relatively small part of the overall presentations. Much of the emphasis in the other presentations focused on environmental factors including poverty, gangs, guns, racism, and other environmental variables

suggesting that the drugs themselves were relatively benign and innocent bystanders to a violent panorama caused by a variety of other political, legal, and socioeconomic forces.

When the relationship between drugs and violence was presented by Dr. Clark, the focus was on crack cocaine abuse in the African American community. There is a significant association between crack cocaine and violence both in relation to the toxicity of the drug and its relation to gang-related violent activity. For example, a 1995 study by the Department of Justice indicated that drug offenders accounted for nearly a third of the 872,200 felony convictions across the country in 1994. n1 The number of state felony convictions actually declined from 1992, but teenage murderers were an exception to that trend. n2 Teenagers accounted for 10% of murders in 1988, but 18% in 1994 as they were recruited into violent crack cocaine trafficking. n3 Fifty-one percent of the convicted felons were white, 48% were black, and 1% were from other

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ethnicities. n4 Although the focus of national policy has been on youth crack cocaine and gang activity, it is clear that the teenage drug abuse problem is much broader. It was for that reason that the authors selected methamphetamine abuse as a prototypical drug phenomenon since the pharmacological properties of this psychoactive stimulant contribute directly to violence. In fact, methamphetamine, or "speed," had such a disastrous effect in the Haight Ashbury district of San Francisco, that it turned the "Summer of Love" into a scene of drug-induced violence in 1968. n5

## II. Methamphetamine Abuse

Methamphetamine abuse contributes directly to violence in a variety of ways, but in fact, epidemiological studies have indicated that this contribution occurs most commonly in the Caucasian population. The evidence contradicts the stereotype that stimulant-induced violence is a phenomenon almost entirely associated with crack cocaine in the African American community. That stereotype has permeated public policy. Eighty percent of people incarcerated in the criminal justice system have substance abuse problems, but only 5% received treatment for their addiction. n6 The incidence of substance abuse when matched with socio-economic status is only slightly higher in African American males than in Caucasian males, but an African American male is ten times more likely to be in prison for the same drug offense as a Caucasian male. n7 The perception that drugs and violence occur only in the African American community is a driving force behind this public policy imbalance.

Although drug use was featured prominently in the title of this conference, virtually no mention was made of the treatment for those actively involved with drugs as a crime prevention technique. In fact, the evidence shows that treatment for addiction produces a substantial reduction in criminality and associated violence and is a much more cost effective approach to this problem. The lack of discussion of treatment as an alternative to drug abuse and violence suggests that pessimism exists regarding its ability, particularly related to stimulant abuse. In fact, the evidence indicates that addiction is a treatable illness and there are good results when treatment is made available for stimulant abusers.

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#### A. The Results of a Recent Study

A study sponsored by Andrew M. Mecca, Director of the State of California Department of Alcohol and Drug Programs, the California Drug and Alcohol Treatment Assessment (CALDATA), graphically projects the efficacy of treatment for drug and alcohol abuse. That comprehensive study involved 1900 participants, representing nearly 150,000 service recipients and included residential, social model, outpatient, discharged methadone, and continuing methadone treatment and produced the following findings:

(1) The level of criminal activity declined by two-thirds from the period before treatment to a comparable period after treatment. The greater the length of time spent in treatment, the greater the percent reduction in criminal activity.

(2) The cost of treating participants in the study sample was \$ 209 million while the benefits received by taxpaying citizens were worth approximately \$ 1.5 billion. Total system savings exceeded costs at a ratio of 7 to 1. The savings exceeded costs for each of the treatment types studied, with ratios ranging from 12 to 1 to 4 to 1.

(3) Significant declines occurred in the use of alcohol and other drugs in the period after treatment as compared to the period before: crack, cocaine, and amphetamine use declined by almost one-half; heroin by over one-fifth; and alcohol by almost one-third. n8

It can be seen from these findings that treatment has a most dramatic effect on the control of stimulant drug abuse. Significant improvement was noted in the level of criminal activity, including declines in use, a one-third reduction in hospitalizations and significant improvement in other health indicators. Also noted was decreased disability and MediCal utilization which had a greatly improved effect on the economy and on employment. Significantly, no great differences in age, gender or ethnicity were noted. At a time when methamphetamine and violence related to methamphetamine abuse are major concerns, it is well-advised to look at the nature of this pernicious stimulant drug and how its use can be controlled through awareness and treatment.

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#### B. The Characteristics of Methamphetamine

Methamphetamine (MA) is similar in chemical structure to amphetamine but has more pronounced effects on the central nervous system (CNS). Like amphetamine, it causes increased activity, decreased appetite, and a general sense of well-being. Injected intravenously (IV), MA produces a "rush." Most illicit "speed" is MA, and it can be swallowed, insufflated, or injected. In recent years a smokable form, "Ice," has come into

use. Ice is a large, usually clear crystal of high purity that is smoked in a glass pipe like crack cocaine. The smoke is odorless, leaves a residue that can be resmoked, and its effects may continue for up to twelve hours. n9 As with other CNS stimulants, MA is generally used in a "binge and crash" pattern. Chronic abuse can lead to a dose-related stimulant psychosis, characterized by intense paranoia with ideas of reference and out-of-control rage coupled with extremely violent behavior. n10

MA dependence is a serious problem in the United States that has historically occurred in waves resembling patterns seen in epidemics of infectious disease. n11 The Drug Abuse Warning Network emergency department mentions that cases involving MA more than tripled from 4900 in 1991 to 17,400 in 1994. n12 Although MA dependence has, in recent years, been concentrated in the Western states, ethnographers, police, and treatment providers report increasing use of MA in the East and Southeast. n13

Increased HIV transmission is a likely consequence of increased MA use. While the effects on sexuality of MA and related psychomotor stimulants are variable, they frequently increase libido. n14 This is in contrast to opiates, which

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decrease libido and frequently result in inability to achieve erection in males. n15 MA may delay ejaculation and be associated with rougher sex; these factors may lead to abrasions and bleeding. Rougher and prolonged sexual activity may also explain the association between MA use and condom failure.

Administration by injection presents another hazard for HIV transmission in MA users. For example, in 1990, 26% of the patients admitted for MA dependence in California reported injection drug use (IDU) and 67% of San Francisco admissions reported IDU. n16 As each cohort of MA users ages, an increasing proportion will become IDUs. Given the large proportion of new users, the number of IV users is likely to increase rapidly.

The confluence of injection and sexual risks has resulted in an HIV seropositivity rate of 11% in out-of-treatment heterosexual MA users in the Sacramento area, as contrasted to 4% for opiate users. n17 There is a four-fold higher rate of HIV seropositivity in MA injectors than heroin injectors in the Seattle area, after adjusting for sexual orientation. n18 HIV may become a greater problem in MA users than in opiate and other drug users; this has apparently already happened in California. Methamphetamine abuse also appears to have a damaging effect on the unborn fetus, as manifest in pre-maternity by weight and developmental difficulties in the newborn similar to those of the crack cocaine exposed infant.

Axis I disorders are common in other drug dependencies and may be important in MA dependence. It has been postulated that drug abuse, in at least a subset of abusers, may grow out of an attempt to self-medicate an existing disorder. n19 In the case of amphetamine abuse, self-medication of an underlying depressive disorder n20 or of an adult attention deficit disorder n21 may be

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operating. The utility of methamphetamine and related psychomotor stimulants in the treatment of attention deficit disorder, major depression, and other psychiatric conditions lends credence to the idea that at least some methamphetamine abusers are medicating co-morbid psychiatric disorders. In individuals for whom this is the case, proper diagnosis and treatment of the underlying psychiatric disorder has been shown to substantially improve outcomes, though certainly treatment addressing the secondary reinforcers of the addiction itself is still critical.

The prevalence of Axis II disorders in MA abusers is also important to establish. Milkman and Frosch suggested that amphetamine abusers choose amphetamines to augment a pre-existing and regressive defensive strategy of "narcissistic self-inflation and abstract communication," but this work did not use standard diagnostic instruments.

In addition, the psychiatric consequences of MA abuse may be differentially manifested in abusers with pre-existing psychiatric disorders. While the general acute effects of MA have been well documented, the acute effects have not been differentially described in people with different pre-morbid conditions. For instance, an amphetamine abuser who is using to medicate an attention deficit disorder may present quite differently from an abuser who is attempting to medicate an underlying depressed mood or one whose primary reason for using is related to social context.

Perhaps even more important than the identification of pre-existing pathology is an understanding of, and ability to identify, the psychiatric consequences of chronic MA abuse. Neuroadaptation to repeated over-stimulation of catecholamine pathways is likely to result in changes in both psychological and intellectual functioning that persist once use is stopped. Secondarily acquired but persistent paranoid and psychotic symptoms have been documented retrospectively in stimulant abusers followed over six years of abuse. Independent of pre-morbid status, if MA abusers develop over time a characteristic pattern of pathology or impairment that lends itself to psychiatric intervention, identification of such consequences should help clinicians to develop optimum treatment strategies for these MA abusers. The prevalence,

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severity, and persistence of neuropsychiatric impairment have important implications for the design and implementation of cognitively-based interventions, whether they be aimed at high-risk behaviors or MA dependence.

Methamphetamine dependence has been described by authors who have noted a withdrawal syndrome characterized by lack of energy, depressed mood, and hypersomnia. With abstinence, these symptoms and the stimulant psychosis generally resolve, although they can reappear if the user returns to methamphetamine abuse.

The use of antipsychotic medication, such as haloperidol (Haldol), for the management of the acute methamphetamine psychotic and antianxiety medication, such as the benzodiazepines, for management of acute stimulant induced panic attacks is well established. However, the value of anti-craving medications used post-detoxification has not been established. Specific relapse prevention techniques in amphetamine and MA recovery support groups appear to be more effective adjuncts to long-term drug-free recovery.

### III. Conclusion

In summary, this paper has focused on methamphetamine as a prototypical drug of violence that tends to counter the stereotype that drug-induced violence occurs only with crack cocaine abuse in the African American community. In fact, as has been demonstrated by Dr. Douglas Anglin at a recent NIDA conference, a majority of methamphetamine abuse occurs in the Caucasian community, with the second group being Hispanics, and only 5% of those involved with methamphetamines being African American. n27 Methamphetamine, as demonstrated in this study, is an equal or greater contributor to criminality than crack cocaine. Violence occurs not just on the street in teenage situations, but there is a comorbidity between domestic violence and addictive behavior as well. In addition to the role of amphetamines in violence, alcohol sharply diminishes impulse control and stimulants can produce paranoia and lead to preemptive violence. Drug use and teenage violence needs to be placed in a broader context that includes education, prevention and treatment as well as criminalization. The drugs themselves are potent contributors to violence and increased attention needs to be paid to the role of substance abuse in violent behavior. Further, expanded treatment for addiction needs to be presented as a cost-effective crime prevention technique as well as a humane alternative to incarceration.

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Steven Ring  
Reference and Web Content Librarian  
University of Houston Downtown  
One Main Street  
Houston, Texas 77002  
Phone: (713) 221-8976  
Fax: (713) 222-5323  
E-mail: rings@uhd.edu

# NATIONAL INSTITUTE ON DRUG ABUSE

# Research Report

## SERIES

*The abuse of methamphetamine—a potent psychostimulant—is an extremely serious and growing problem. Although use of methamphetamine initially was limited to a few urban areas in the Southwest, several major Western cities and Hawaii have seen dramatic increases in its use, and rural areas throughout the country are becoming more affected by the drug. In addition, methamphetamine use among significantly diverse populations has been documented.*

*As part of our Methamphetamine Research Initiative, the National Institute on Drug Abuse (NIDA) has developed this publication to provide an overview of the latest scientific findings on this drug. Methamphetamine is a powerfully addictive stimulant associated with serious health conditions including memory loss, aggression, psychotic behavior, and potential heart and brain damage; it also contributes to increased transmission of hepatitis and HIV/AIDS.*

*One of NIDA's most important goals is to translate what scientists learn from research to help the public better understand drug abuse and addiction and to develop more effective strategies for their prevention and treatment. We hope this compilation of scientific information about methamphetamine will help inform readers about the harmful effects of methamphetamine abuse and will assist in prevention and treatment efforts.*

**Glen R. Hanson, Ph.D., D.D.S.**  
Acting Director  
National Institute on Drug Abuse

## METHAMPHETAMINE

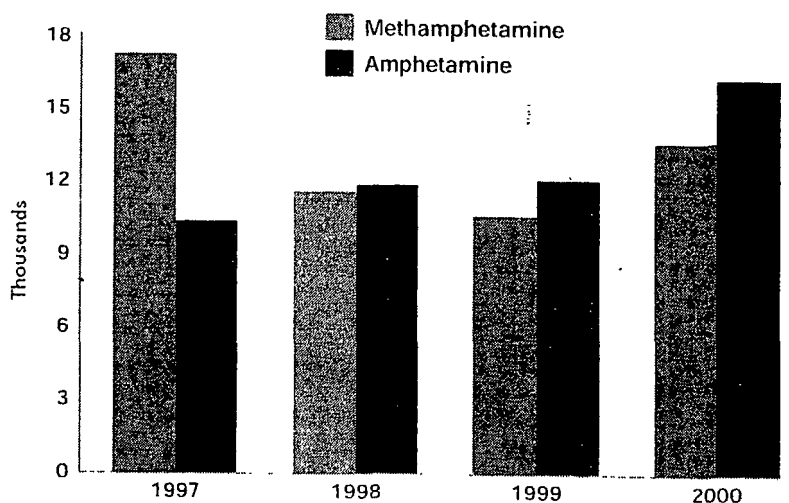
### Abuse and Addiction

### What is methamphetamine?

**M**ethamphetamine is a powerfully addictive stimulant that dramatically affects the central nervous

system. The drug is made easily in clandestine laboratories with relatively inexpensive over-the-counter ingredients. These factors combine to make methamphetamine a drug with high potential for widespread abuse.

**Trends in number of emergency department mentions of methamphetamine, 1997-2001**



Source: Drug Abuse Warning Network, SAMHSA, 2000

from the director

## NIDA RESEARCH REPORT SERIES

Methamphetamine is commonly known as "speed," "meth," and "chalk." In its smoked form, it is often referred to as "ice," "crystal," "crank," and "glass." It is a white, odorless, bitter-tasting crystalline powder that easily dissolves in water or alcohol. The drug was developed early in this century from its parent drug, amphetamine, and was used originally in nasal decongestants and bronchial inhalers.

Methamphetamine's chemical structure is similar to that of amphetamine, but it has more pronounced effects on the central nervous system. Like amphetamine, it causes increased activity, decreased appetite, and a general sense of well-being. The effects of methamphetamine can last 6 to 8 hours. After the initial "rush," there is typically a state of high agitation that in some individuals can lead to violent behavior.

Methamphetamine is a Schedule II stimulant, which means it has a high potential for abuse and is available only through a prescription that cannot be refilled. There are a few accepted medical reasons for its use, such as the treatment of narcolepsy, attention deficit disorder, and—for short-term use—obesity; but these medical uses are limited.

## What is the scope of methamphetamine abuse in the United States?

Methamphetamine abuse, long reported as the dominant drug problem in the San Diego, CA, area, has

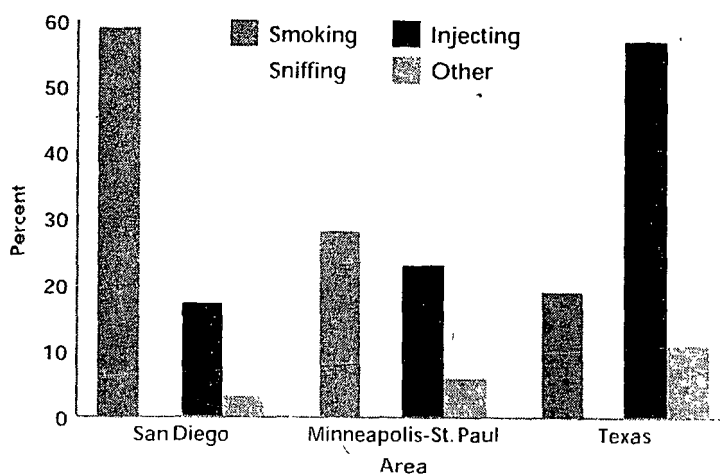
become a substantial drug problem in other sections of the West and Southwest, as well. There are indications that it is spreading to other areas of the country, including both rural and urban sections of the South and Midwest. Methamphetamine, traditionally associated with white, male, blue-collar workers, is being used by more diverse population groups that change over time and differ by geographic area.

According to the 2000 National Household Survey on Drug Abuse, an estimated 8.8 million people (4.0 percent of the population) have tried methamphetamine at some time in their lives.

Data from the 2000 Drug Abuse Warning Network (DAWN), which collects information on drug-related episodes from hospital emergency departments in 21 metropolitan areas, reported that methamphetamine-related episodes increased from approximately 10,400 in 1999 to 13,500 in 2000, a 30 percent increase. However, there was a significant decrease in methamphetamine-related episodes reported between 1997 (17,200) and 1998 (11,500).

NIDA's Community Epidemiology Work Group (CEWG), an early warning network of researchers that provides information about the nature and patterns of drug use in major cities, reported in its June 2001 publication that methamphetamine continues to be a problem in Hawaii and in major Western cities, such as San Francisco,

**The preferred method of taking methamphetamine varies among geographical regions.**



Note: Calendar year 2000 in Minneapolis/St. Paul, July–December 2000 in San Diego, and January–June 2001 in Texas.

Source: Community Epidemiology Work Group.

Denver, and Los Angeles. Methamphetamine availability and production are being reported in more diverse areas of the country, particularly rural areas, prompting concern about more widespread use.

Drug abuse treatment admissions reported by the CEWG in June 2001 showed that methamphetamine remained the leading drug of abuse among treatment clients in the San Diego area and Hawaii. Stimulants including methamphetamine, accounted for smaller percentages of treatment admissions in other states and metropolitan areas of the West (e.g., 9 percent in Los Angeles and Seattle and 8 percent in Texas). By comparison, stimulants were the primary drugs of abuse in a smaller percent of treatment admissions in

most Eastern and Midwestern metropolitan areas, such as Minneapolis-St. Paul and St. Louis, where they accounted for approximately 3 percent of total admissions, or Baltimore, where no stimulant-related treatment admissions were reported in the first half of 2000.

## How is methamphetamine used?

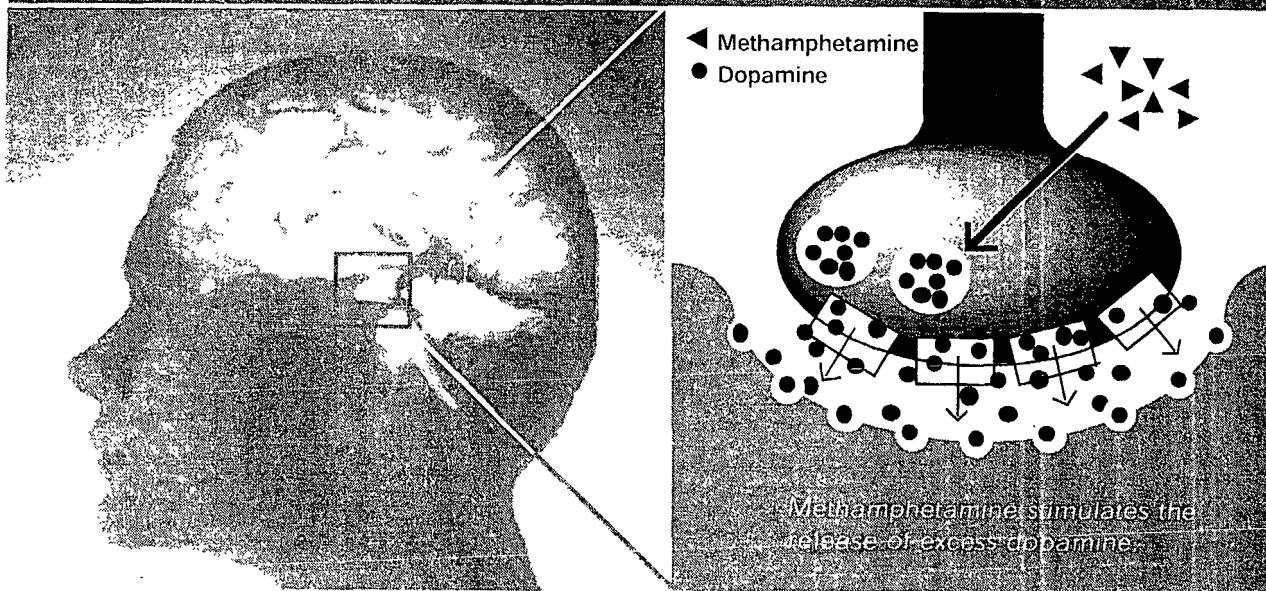
**M**ethamphetamine comes in many forms and can be smoked, snorted, orally ingested, or injected. The drug alters moods in different ways, depending on how it is taken.

Immediately after smoking the drug or injecting it intra-

venously, the user experiences an intense rush or "flash" that lasts only a few minutes and is described as extremely pleasurable. Snorting or oral ingestion produces euphoria—a high but not an intense rush. Snorting produces effects within 3 to 5 minutes, and oral ingestion produces effects within 15 to 20 minutes.

As with similar stimulants, methamphetamine most often is used in a "binge and crash" pattern. Because tolerance for methamphetamine occurs within minutes—meaning that the pleasurable effects disappear even before the drug concentration in the blood falls significantly—users try to maintain the high by bingeing on the drug.

**In the brain, dopamine plays an important role in the regulation of pleasure. In addition to other regions, dopamine is manufactured in nerve cells within the ventral tegmental area and is released in the nucleus accumbens and the frontal cortex.**



**NIDA RESEARCH REPORT SERIES**

In the 1980's, "ice," a smokable form of methamphetamine, came into use. Ice is a large, usually clear crystal of high purity that is smoked in a glass pipe like crack cocaine. The smoke is odorless, leaves a residue that can be resmoked, and produces effects that may continue for 12 hours or more.

## What are the immediate (short-term) effects of methamphetamine abuse?

**A**s a powerful stimulant, methamphetamine, even in small doses, can increase wakefulness and physical activity and decrease appetite. A brief, intense sensation, or rush, is reported by those who smoke or inject methamphetamine. Oral ingestion or snorting produces a long-lasting high instead of a rush, which reportedly can continue for as long as half a day. Both the rush and the high are believed to result from the release of very high levels of the neurotransmitter dopamine into areas of the brain that regulate feelings of pleasure.

Methamphetamine has toxic effects. In animals, a single high dose of the drug has been shown to damage nerve terminals in the dopamine-containing regions of the brain. The large release of dopamine produced by methamphetamine is thought to contribute to the drug's toxic effects

on nerve terminals in the brain. High doses can elevate body temperature to dangerous, sometimes lethal, levels, as well as cause convulsions.

### Short-term effects may include:

- Increased attention and decreased fatigue
- Increased activity
- Decreased appetite
- Euphoria and rush
- Increased respiration
- Hyperthermia

## What are the long-term effects of methamphetamine abuse?

**L**ong-term methamphetamine abuse results in many damaging effects, including addiction. Addiction is a chronic, relapsing disease, characterized by compulsive drug-seeking and drug use which is accompanied by functional and molecular changes in the brain. In addition to being addicted to methamphetamine, chronic methamphetamine abusers exhibit symptoms that can include violent behavior, anxiety, confusion, and insomnia. They also can display a number of psychotic features, including

paranoia, auditory hallucinations, mood disturbances, and delusions (for example, the sensation of insects creeping on the skin, which is called "formication"). The paranoia can result in homicidal as well as suicidal thoughts.

With chronic use, tolerance for methamphetamine can develop. In an effort to intensify the desired effects, users may take higher doses of the drug, take it more frequently, or change their method of drug intake. In some

### Long-term effects may include:

- Dependence and addiction
- Psychosis
- Paranoia
- Hallucinations
- Mood disturbances
- Repetitive motor activity
- Stroke
- Weight loss

cases, abusers forego food and sleep while indulging in a form of bingeing known as a "run," injecting as much as a gram of the drug every 2 to 3 hours over several days until the user runs out of the drug or is too disorganized to continue. Chronic abuse can lead to psychotic behavior, characterized by intense paranoia, visual and auditory hallucinations, and out-of-control rages that can be coupled with extremely violent behavior.

Although there are no physical manifestations of a withdrawal syndrome when methamphetamine use is stopped, there are several symptoms that occur when a chronic user stops taking the drug. These include depression, anxiety, fatigue, paranoia, aggression, and an intense craving for the drug.

In scientific studies examining the consequences of long-term methamphetamine exposure in animals, concern has arisen over its toxic effects on the brain. Researchers have reported that as much as 50 percent of the dopamine-producing cells in the brain can be damaged after prolonged exposure to relatively low levels of methamphetamine. Researchers also have found that serotonin-containing nerve cells may be damaged even more extensively. Whether this toxicity is related to the psychosis seen in some long-term methamphetamine abusers is still an open question.

## How is methamphetamine different from other stimulants, such as cocaine?

**M**ethamphetamine is classified as a psychostimulant, as are other drugs of abuse such as amphetamine and cocaine. We know that methamphetamine is structurally similar to amphetamine and the neurotransmitter dopamine, but it is quite different from cocaine. Although these stimulants have similar behavioral and physiological effects, there are some major differences in the basic mechanisms of how they work at the level of the nerve cell. However, the bottom line is that methamphetamine, like cocaine, results in an accumulation of the neurotransmitter dopamine, and this excessive dopamine concentration appears to produce the stimula-

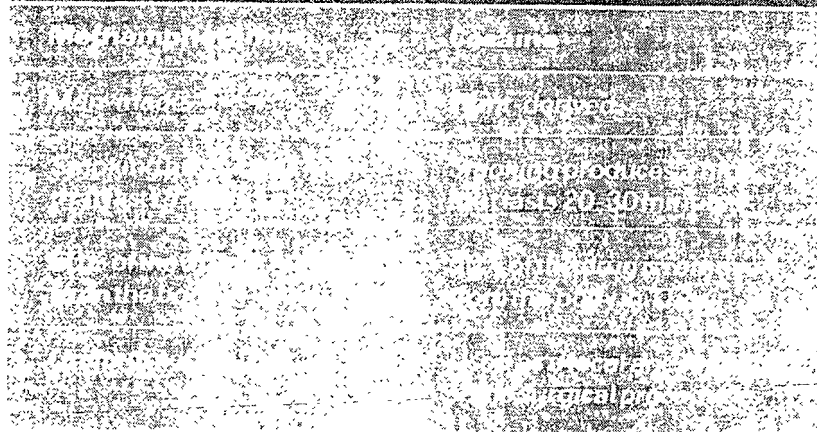
tion and feelings of euphoria experienced by the user. In contrast to cocaine, which is quickly removed and almost completely metabolized in the body, methamphetamine has a much longer duration of action and a larger percentage of the drug remains unchanged in the body. This results in methamphetamine being present in the brain longer, which ultimately leads to prolonged stimulant effects.

## What are the medical complications of methamphetamine abuse?

**M**ethamphetamine can cause a variety of cardiovascular problems. These include rapid heart rate, irregular heartbeat, increased blood pressure, and irreversible, stroke-producing damage to small blood vessels in the brain. Hyperthermia (elevated body temperature) and convulsions occur with methamphetamine overdoses, and if not treated immediately, can result in death.

Chronic methamphetamine abuse can result in inflammation of the heart lining, and among users who inject the drug, damaged blood vessels and skin abscesses. Methamphetamine abusers also can have episodes of violent behavior, paranoia, anxiety, confusion, and insomnia. Heavy users also show progressive social and occupational deterioration. Psychotic symptoms

**Although both methamphetamine and cocaine are psychostimulants, there are differences between them.**





can sometimes persist for months or years after use has ceased.

Acute lead poisoning is another potential risk for methamphetamine abusers. A common method of illegal methamphetamine production uses lead acetate as a reagent. Production errors therefore may result in methamphetamine contaminated with lead. There have been documented cases of acute lead poisoning in intravenous methamphetamine abusers.

Fetal exposure to methamphetamine also is a significant problem in the United States. At present, research indicates that methamphetamine abuse during pregnancy may result in prenatal complications, increased rates of premature delivery, and altered neonatal behavioral patterns, such as abnormal reflexes and extreme irritability. Methamphetamine abuse during pregnancy may be linked also to congenital deformities.

## **Are methamphetamine abusers at risk for contracting HIV/AIDS and hepatitis B and C?**

**I**ncreased HIV and hepatitis B and C transmission are likely consequences of increased methamphetamine abuse, particularly in individuals who inject the drug and share injection equipment. Infection with HIV and other infectious diseases is spread

among injection drug users primarily through the re-use of contaminated syringes, needles, or other paraphernalia by more than one person. In nearly one-third of Americans infected with HIV, injection drug use is a risk factor, making drug abuse the fastest growing vector for the spread of HIV in the nation.

Research also indicates that methamphetamine and related psychomotor stimulants can increase the libido in users, in contrast to opiates which actually decrease the libido. However, long-term methamphetamine use may be associated with decreased sexual functioning, at least in men. Additionally, methamphetamine seems to be associated with rougher sex, which may lead to bleeding and abrasions. The combination of injection and sexual risks may result in HIV becoming a greater problem among methamphetamine abusers than among opiate and other drug abusers, something that already seems to be occurring in California.

NIDA-funded research has found that, through drug abuse treatment, prevention, and community-based outreach programs, drug abusers can change their HIV risk behaviors. Drug use can be eliminated and drug-related risk behaviors, such as needle-sharing and unsafe sexual practices, can be reduced significantly thus decreasing the risk of exposure. Therefore, drug abuse treatment is also highly effective in preventing the spread of HIV, hepatitis B, and hepatitis C.

## **What treatments are effective for methamphetamine abusers?**

**A**t this time the most effective treatments for methamphetamine addiction are cognitive behavioral interventions. These approaches are designed to help modify the patient's thinking, expectancies, and behaviors and to increase skills in coping with various life stressors. Methamphetamine recovery support groups also appear to be effective adjuncts to behavioral interventions that can lead to long-term drug-free recovery.

There are currently no particular pharmacological treatments for dependence on amphetamine or amphetamine-like drugs such as methamphetamine. The current pharmacological approach is borrowed from experience with treatment of cocaine dependence. Unfortunately, this approach has not met with much success since no single agent has proven efficacious in controlled clinical studies. Antidepressant medications are helpful in combating the depressive symptoms frequently seen in methamphetamine users who recently have become abstinent.

There are some established protocols that emergency room physicians use to treat individuals who have had a methamphetamine overdose. Because hyperthermia and convulsions are common and often fatal complications of such

overdoses, emergency room treatment focuses on the immediate physical symptoms. Overdose patients are cooled off in ice baths, and anticonvulsant drugs may be administered also.

Acute methamphetamine intoxication can often be handled by observation in a safe, quiet environment. In cases of extreme excitement or panic, treatment with antianxiety agents such as benzodiazepines has been helpful, and in cases of methamphetamine-induced psychoses, short-term use of neuroleptics has proven successful.

## Where can I get further scientific information about methamphetamine abuse?

To learn more about methamphetamine and other drugs of abuse, contact the National Clearinghouse for Alcohol and Drug Information (NCADI) at 1-800-729-6686. Information specialists are available to assist you in locating needed information and resources. Information can be accessed through the NIDA Web site ([www.drugabuse.gov](http://www.drugabuse.gov)) or the NCADI Web site ([www.health.org](http://www.health.org)).

Fact sheets on health effects of drug abuse and other topics can be ordered free of charge, in English and Spanish, by calling NIDA INFOFAX at 1-800-NIDA (1-800-644-6432) or 1-888-TTY-NIDA (1-888-889-6432) for the hearing impaired.

A list of fact sheet topics follows.

### Health Effects of Specific Drugs

- Cigarettes and other tobacco products
- Crack and cocaine
- Ecstasy
- Heroin
- Inhalants
- LSD
- Marijuana
- Methamphetamine
- Pain medications
- PCP
- Ritalin
- Rohypnol and GHB
- Steroids (anabolic)

### Drug Abuse and AIDS, Lessons from Prevention Research, and Treatment Research

- Treatment methods
- Treatment medications
- Treatment methods for women
- Behavior change through treatment

### Trends and Surveys

- Costs to society from drug abuse
- High school and youth trends
- Hospital visits and deaths
- Nationwide trends
- Pregnancy and drug abuse trends
- Treatment trends
- Workplace trends

### News Releases on Research Findings and Information about NIDA

- Web page
- Mission and structure
- Opportunities for special populations
- Funding opportunities
- Upcoming events and conferences

## Access information on the Internet

- What's new on the NIDA Web site
- Information on drugs of abuse
- Publications and communications (including NIDA NOTES)
- Calendar of events
- Links to NIDA organizational units
- Funding information (including program announcements and deadlines)
- International activities
- Links to related Web sites (access to Web sites of many other organizations in the field)

### NIDA Web Sites

[www.drugabuse.gov](http://www.drugabuse.gov)  
[www.steroidabuse.org](http://www.steroidabuse.org)  
[www.clubdrugs.org](http://www.clubdrugs.org)

### National Clearinghouse for Alcohol and Drug Information (NCADI)

Web Site: [www.health.org](http://www.health.org)  
 Phone No.: 1-800-729-6686



NIDA RESEARCH REPORT SERIES

## Glossary

**Addiction:** a chronic, relapsing disease, characterized by compulsive drug-seeking and drug use and by neurochemical and molecular changes in the brain.

**Analog:** a chemical compound that is similar to another drug in its effects but differs slightly in its chemical structure.

**Benzodiazepines:** drugs that relieve anxiety or are prescribed as sedatives; among the most widely prescribed medications, including valium and librium

**Central nervous system (CNS):** the brain and spinal cord.

**Craving:** a powerful, often uncontrollable desire for drugs.

**Designer drug:** an analog of a restricted drug that has psychoactive properties.

**Detoxification:** a process of allowing the body to rid itself of a drug while managing the symptoms of withdrawal; often the first step in a drug treatment program

**Dopamine:** a neurotransmitter present in regions of the brain that regulate movement, emotion, motivation, and feelings of pleasure.

**Narcolepsy:** a disorder characterized by uncontrollable attacks of deep sleep

**Physical dependence:** an adaptive physiological state that occurs with regular drug use and results in a withdrawal syndrome when drug use stops.

**Psychosis:** a mental disorder characterized by symptoms such as delusions or hallucinations that indicate an impaired conception of reality.

**Rush:** a surge of euphoric pleasure that rapidly follows administration of a drug.

**Serotonin:** a neurotransmitter that has been implicated in states of consciousness, mood, depression, and anxiety.

**Tolerance:** a condition in which higher doses of a drug are required to produce the same effect as experienced initially; often leads to physical dependence.

**Toxic:** temporary or permanent drug effects that are detrimental to the functioning of an organ or group of organs.

**Withdrawal:** a variety of symptoms that occur after use of an addictive drug is reduced or stopped

## Resources

"Blood Level of Intravenous Drug Users," by R.L. Norton, B.T. Burton, and J. McGirr. *Journal of Clinical Toxicology* 34(4):425-30, 1996.

*Epidemiologic Trends in Drug Abuse: Vol. I Highlights and Executive Summary of the Community Epidemiology Work Group*, June 2001. NIH Pub. No. 01-4916A. National Institute on Drug Abuse, 2001.

*Epidemiologic Trends in Drug Abuse: Vol. II. Proceedings of the Community Epidemiology Work Group*, June 2001. NIH Pub. No. 01-4917A. National Institute on Drug Abuse, 2001.

"Integrating Treatments for Methamphetamine Abuse: A Psychosocial Perspective," by A. Huber, W. Ling, S. Shoptaw, V. Gulati, P. Brethen, and R. Rawson. *Journal of Addictive Diseases*, 16(4):41-50, 1997.

"Like Methamphetamine, Ecstasy May Cause Long-Term Brain Damage," by R. Mathias. *NIDA Notes* 11:7, 1996.

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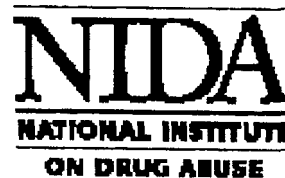
*National Survey Results on Drug Use From the Monitoring the Future Study, 1975-1994, Vol. I: Secondary School Students*. NIH Pub. No. 93-3498. National Institute on Drug Abuse, 1995.

*National Survey Results on Drug Use From the Monitoring the Future Study, 1975-1994, Vol. II: College Students and Young Adults*. NIH Pub. No. 96-4027. National Institute on Drug Abuse, 1995

"NIDA Survey Provides First National Data on Drug Abuse During Pregnancy," by R. Mathias. *NIDA Notes* 10:6-7, 1995.

Summary of Findings from the 2000 National Household Survey on Drug Abuse. Substance Abuse and Mental Health Services Administration, 2000

Detailed Emergency Department Tables 2000, Drug Abuse Warning Network. Substance Abuse and Mental Health Services Administration, available online at [www.samhsa.gov/oas/dawn.htm](http://www.samhsa.gov/oas/dawn.htm).



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Feel free to reprint this publication.

*TAB 29*

### Declaration of Lawrence Hughes

My name is Lawrence Hughes and my date of birth is December 16, 1978 and my address is 6207 Hampton Oak Katy, TX. 77449 and my telephone number is 832-794-1805 and I am currently employed.

1. I have known Anthony Haynes all of my life. My mother and Patricia Anthony's mother are very good friends.
2. Anthony was a very typical kid and was always very considerate, and very disciplined.
3. Patricia lived in the <sup>Cy</sup>Si Fair area as I did, and Anthony lived with his father Donald in Missouri City.
4. Anthony thought his dad was too strict and he didn't like staying with him all of the time, so he would come to Si Fair to visit his mother and subsequently visit with me.
5. When Anthony left the ROTC program he was staying with his mom and his mom was getting after him about getting a job, but instead of looking he was hanging out with me. We would play video games and some times smoke pot.
6. I am the person that introduced Anthony to Crystal Meth through Tim Reese. Anthony knew that I didn't like Tim Reese, but would sell Crystal Meth to him.
7. Anthony wanted to make some money, because he was not working and his mother was riding him hard about not getting a job, so he approached me about selling some meth, Anthony asked for the Meth 2 days before the murder. I did not know that Anthony had taken the Meth until I received a phone after I had left to go to Dallas to attend a graduation. I learned at that time that Anthony had taken Meth and was acting wierd and talking crazy.
8. Anthony had told me that a few days before the murder that he had been "jacked" in his car by someone driving a jeep. It really scared him.
9. After taking the Meth Anthony called me at 5:00 a.m. in Dallas talking crazy about wanting a gun because he was being followed again by a jeep.
10. A guy named Octavias from Missouri City had a 22 pistol and sold it to Anthony, however I gave Anthony \$60.00 for the pistol and hid it in a drawer before I went to Dallas.
11. Within 2 days before the murder I am not sure how much Crystal Meth Anthony had ingested, but I know through people that were around him like Lisa and Melonie that he had not slept at all and was acting very parinoid and talking about being followed.
12. I later learned that on the day of the murder Anthony had met up with Tim Reese and they

were together during the day and up until the incident.

13. I was never asked to testify and if I had I would have. This was the drug not Anthony, and I feel so responsible for placing Anthony in the position that brought him to this situation that he is in today,

I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief and that this declaration was executed on June 30, 2005 in Houston, TX.

  
Lawrence Hughes

*TAB 30*

### DECLARATION OF KENNETH PORTER

My name is Kenneth Porter. I am over the age of 18 and am capable of making this declaration. My address is 1815 Wood Orchard Drive, Missouri City, Texas 77489.

My wife and I were neighbors of Anthony Haynes and his family. My wife's name is Lee Esther Porter. We lived three houses down from them. We lived there from when Anthony was 12 or 13. Our two daughters, now aged 26 and 22, were about Anthony's age. Anthony was friends with our daughters.

Anthony was a good kid, always smiling, always joking around, and very respectable. He was the kind of kid you would not mind hanging around your house. I would see him in the neighborhood, helping out his dad in the yard. Anthony was always helping his father, and would never give any back talk. We would also see him at the store, and he was always very polite. He never expressed any animosity toward the police or police officers. Anthony was a humble kid, not boastful. I was shocked when this happened. I never knew him to hang out with the wrong crowd.

I think that the likelihood of Anthony committing future violent or dangerous acts is very low, and I would have been willing to testify to this at the time of Anthony's trial. The defense attorneys or investigators never contacted me at the time of the trial. If these attorneys or defense investigators had contacted me, I would have told them what is in this declaration. If I had been asked to be a witness for Anthony Haynes, I would have been willing to do so.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief, and that this declaration was executed on July 11, 2005 in Missouri, Texas.

*Kenneth Porter*

TAB 31

### DECLARATION OF LEE ESTHER PORTER

My name is Lee Esther Porter. I am over the age of 18 and capable of making this declaration. I am employed at Douglas Elementary School as a reading specialist for grades K through 3. My husband and I were neighbors of Anthony Haynes and his family. My husband's name is Kenneth Porter. We lived three houses down from them. We lived there from when Anthony was 12 or 13. Our two daughters, now aged 26 and 22, were about Anthony's age and Anthony was friends with our daughters.

Anthony was a good kid, always smiling, always joking around, and very respectable. He was the kind of kid you would not mind hanging around your house. I would see him in the neighborhood, helping out his dad in the yard. Anthony was always helping his father, and would never give any back talk. We would also see him at the store, and he was always very polite. He never expressed any animosity toward the police or police officers. Anthony was a humble kid, not boastful. I was shocked when this happened. I never knew him to hang out with the wrong crowd.

I think that the likelihood of Anthony committing future violent or dangerous acts is very low, and I would have been willing to testify to this at the time of Anthony's trial. The defense attorneys or investigators never contacted me at the time of the trial. If these attorneys or defense investigators had contacted me, I would have told them what is in this declaration. If I had been asked to be a witness for Anthony Haynes, I would have been willing to do so.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief, and that this declaration was executed on July 11, 2005 in Missouri City Texas.

*Lee Esther Porter*

TAB 32

### DECLARATION OF BEVERLY SCOTT

My name is Beverly Scott. My date of birth is April 29, 1958. My address is 1823 Wood Orchard, Missouri City, Texas 77489.

I was a next door neighbor of Mr. Donald Haynes. Anthony Haynes was in grade school when I first met him, in the fourth or fifth grade. He was a nice, respectable kid, and I had no problems from him. Anthony has been in my house many times. I never saw him get into trouble and he didn't hang around with bad kids. Occasionally, Anthony would help me take groceries into my house. He would also help his father out in the yard. I knew that Anthony drove his father's truck, but never knew him to drive recklessly.

Anthony was a good student at school and he said he got good grades. I knew he was in ROTC at high school. I knew him up until he was arrested for the killing of the officer.

Anthony was not hostile toward the police. I did not know he used drugs. He was a respectful kid, an all-around good kid. I knew he had a scholarship to Prairie View A & M, and he was proud of that. Anthony was looking forward to attending college.

Based on what I know about Anthony Haynes, I think he is a very low risk of committing future dangerous or violent acts. This was my opinion at the time of the trial and it is still my opinion now.

I was never talked to or contacted by attorneys or investigators for Anthony at the time of his trial. If they had contacted me, I would have told them what I have said in this declaration. If they had asked me to be a witness for Anthony Haynes at his trial, I would have been willing to do so.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief, and that this declaration was executed on October 3, 2005 in Missouri City, Texas.

*Beverly Scott*

Signed with express  
permission by A. Richard Ellis

*A. Richard Ellis*

10-3-05

mill valley CA 94841

TAB 33

### DECLARATION OF DEBRA SWISHER

My name is Debra Swisher and I am 45 years old. My address is 2007 Hammerwood, Missouri City, Texas 77489.

I was a friend of Anthony Haynes. I used to own a restaurant, RonDee's Diner, in the 2300 block of te Texas Parkway. I closed it in 1998. Before the incident in which Anthony was charged with the killing of the police officer, Anthony would come in to the restaurant and talk to me. I liked him a lot. He was soft-spoken, intelligent, polite, and often gave me a hug when he left.

For a period of about six months, before he graduated from high school, Anthony would come in to the diner about twice a week. He wanted to talk, about school and his fellow students, just general stuff. He would talk about his teachers, his favorites and his not- so-favorites. I never knew him to be disrespectful or violent or to be involved in drugs, and I never saw him in any angry outbursts. I was always glad to see him come into the restaurant.

I knew Anthony when he was in high school and after he graduated in 1997. When he was in high school, I was aware he was in ROTC as he would tell me about it.

When I heard about the crime, I was shocked. I did not attend the trial. Based on what I know about Anthony, I believe he would be a very low risk of committing future acts of violence or acts endangering the safety of others. This is my belief now and it was my belief at the time of Anthony's trial.

At the time of the trial, I was never contacted by Anthony's defense attorneys or his investigators. Neither of the defense attorneys spoke to me. If the defense attorneys or the investigator had talked to me at the time of the trial, I would have told them what I have said in this declaration. Had they asked me to be a witness for Anthony at the trial. I would have been willing to do so.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief, and that this declaration was executed on August 24, 2005 in Houston, Texas.

*Debra H. Swisher*  
832-289-6277 cell  
713-704-4033 office  
281-437-2321 home